



Peril and Promise in a New Age

**2013 GRC Semi-Annual Funding
Competitiveness Conference**

21 August 2013

Washington, D.C.

George L. Mehaffy

**In fifty years, if not much sooner,
half of the roughly 4,500 colleges
and universities now operating in the
United States will have ceased to
exist.**

**“The End of the University as We Know It.” Nathan Harden.
The American Interest. January/February 2013.
<http://www.the-american-interest.com/article.cfm?piece=1352>**



A Presentation in Three Parts

1.The Challenges

2.What' s Changing

3.What Disruption Looks Like



**We are confronting massive
change and great uncertainty.**

**Our institutions are challenged
as never before.**



The Overarching Theme of This New Age: Shifting Power

- **The loss of power by traditional institutions**
- **The increased power of individual students**
- **The power of new organizations and groups to enter and compete in the marketplace**



The Great Unbundling, when we can:

- **Separate course elements from a course**
- **Separate courses from a degree**
- **Separate students from a specific college or university**
- **Separate faculty from a specific college or university**
- **Separate support services from the rest of the college or university**



7 Critical Challenges

- 1. Core Concept**
- 2. Structural Model**
- 3. Funding Model**
- 4. Cost Model**
- 5. Business Model**
- 6. Evidence of Success**
- 7. Public Opinion**



1. Our University Model

Was created in the
11th century



Operates on a 19th
century
agrarian calendar

To prepare students
for life in the 21st century



2. Structural Model

In The Innovative University, authors argue that higher education has a common DNA:

Face-to-face instruction, self-governance,
departmentalization, summer recess,
athletics, general education, majors, tenure,
externally-supported research.

(and a very unhealthy aspirational culture)

Their conclusion... We have created

- confused, multiple-purpose missions...and
- unsustainable institutions
- As a result, we are vulnerable to disruption.



3. Funding Model


National Governors Association (NGA):

“...state budgets will not be balanced until the latter part of the decade.”

“Health, criminal justice, and the K-12 schools will consume an increasingly larger share of the state’s resources.”

“Many states have structural deficits...”

<http://www.cbpp.org/cms/?fa=view&id=711>



State Expenditures for Higher Education **(as a percentage of all expenditures: local, state, federal, personal)**

1975: 60%

2010: 34%

But huge variations in states: From 1980 to 2011-

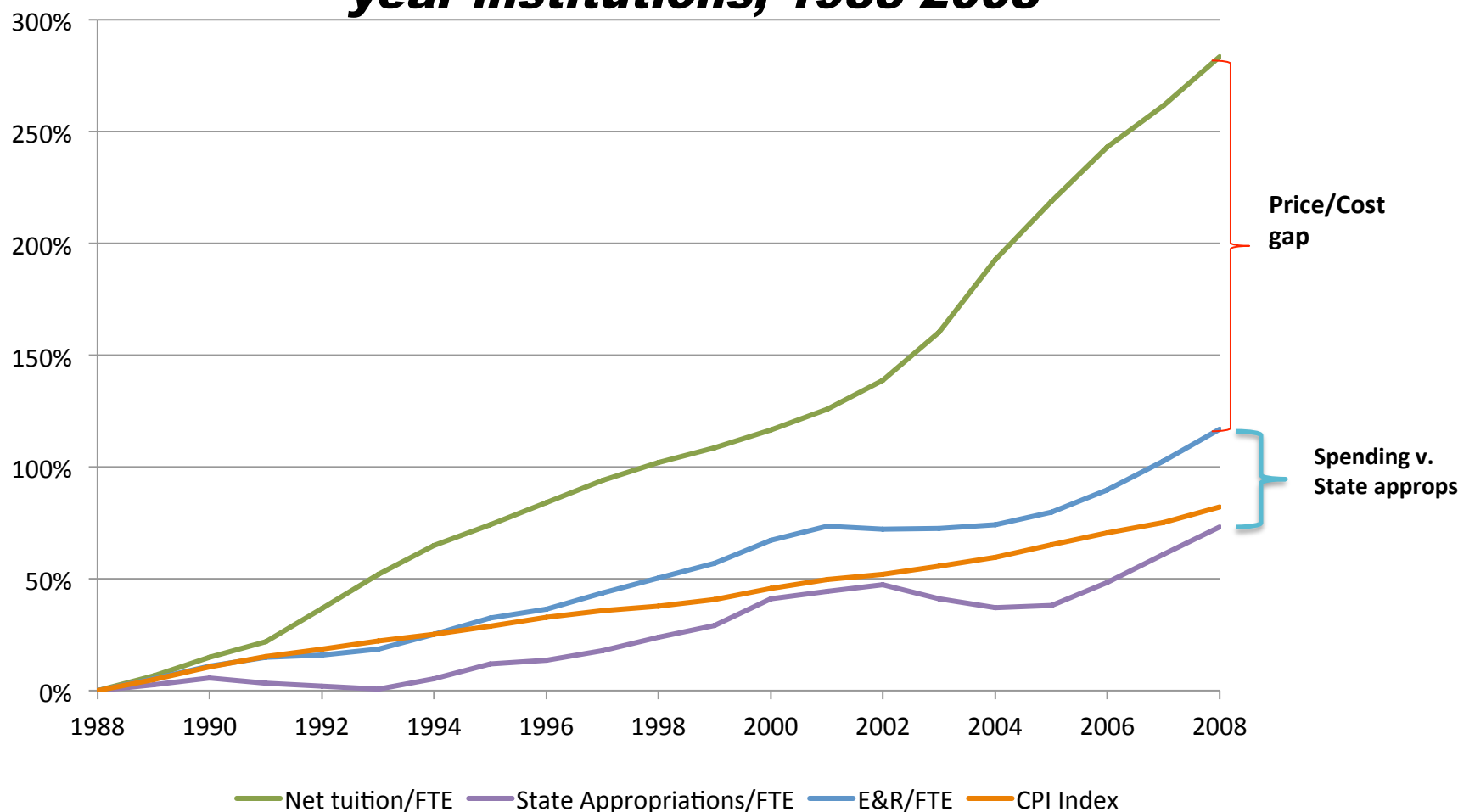
Colorado	69 % decline
Minnesota	56 % decline
North Dakota	1 % increase
Wyoming	3 % increase

Based on the trends since 1980, average state fiscal support for higher education will reach zero by 2059.

State Funding: A Race to the Bottom. Thomas G. Mortenson
<http://www.acenet.edu/the-presidency/columns-and-features/Pages/state-funding-a-race-to-the-bottom.aspx>

4. Cost Model

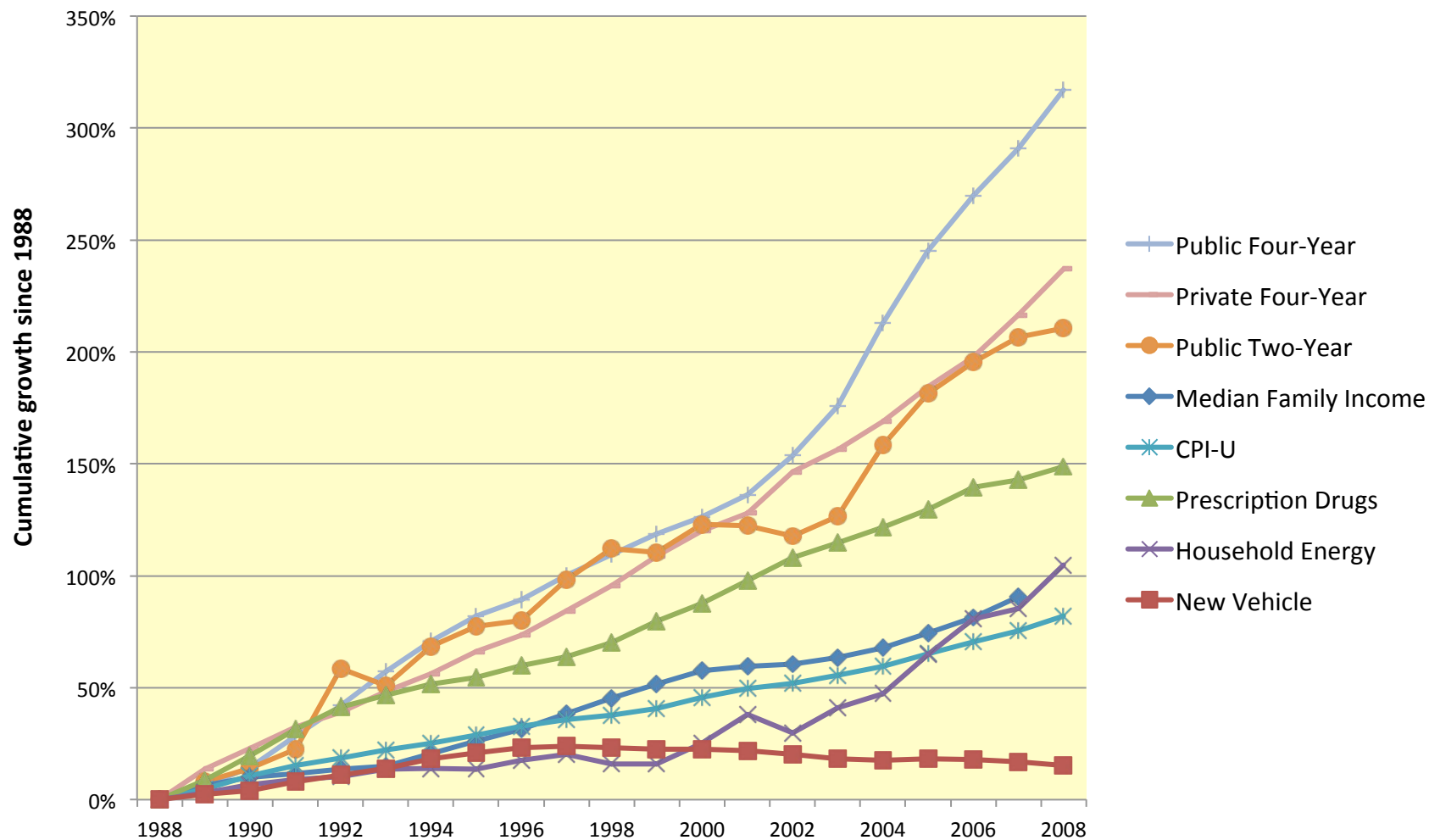
The unsustainable funding trends at public 4-year institutions, 1988-2008



Source: Delta Cost Project IPEDS database, 1987-2008, 22-year matched set. Notes: Percent change since 1988 based on unadjusted dollar amounts. From the Delta project. Courtesy Jane Wellman



The Rising Cost of College, 1988-2008 (based on increases in current dollar amounts)



Sources: College Board, "Trends in College Pricing, 2008"; Bureau of Labor Statistics, 2009, www.bls.gov; U.S. Census, Current Population Study-ASEC, 2008. From the Delta Project. Courtesy Jane Wellman

Simple Numbers:

**Median inflation-adjusted
household income, 2006 – 2011**



7%

**Tuition at public four year
Institutions, 2006 – 2011**



18%

http://www.nytimes.com/2013/02/01/opinion/my-valuable-cheap-college-degree.html?_r=0

**Public higher education – an historic threshold:
Students about to pay a higher percentage than
the state. 2012 – net tuition 47% of public
colleges' costs.**

<http://chronicle.com/article/StudentsStates-Near-a/137709/>



5. Business Model

**Higher education is a set of cross-subsidies:
graduate education subsidized by undergraduate;
upper division subsidized by lower division**

**Jane Wellman, Delta Project
<http://www.deltacostproject.org/>**

We also have cross-subsidies by disciplines.



Credit Hour Distribution and Average Instructional Costs

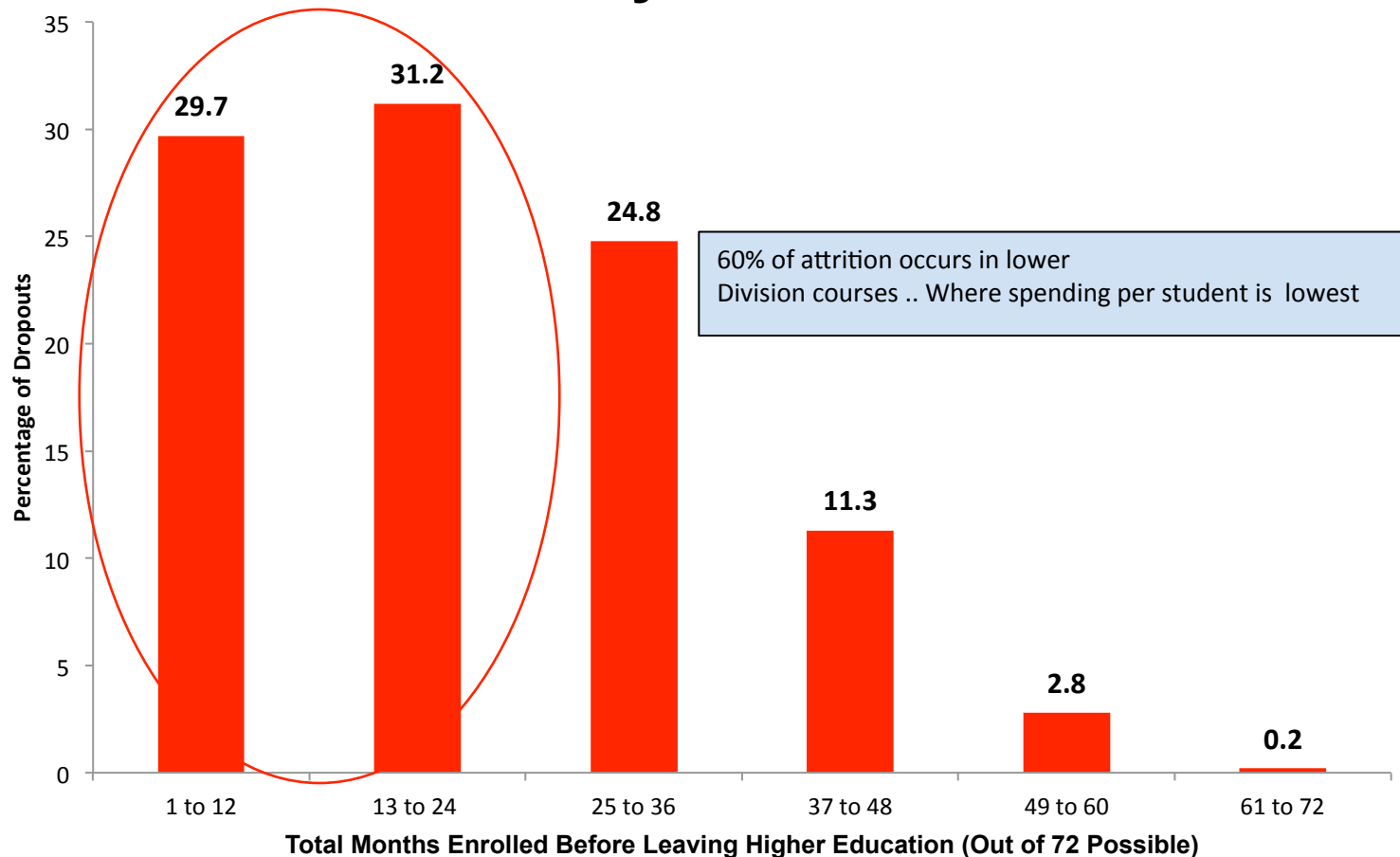
Public-four Year Averages, 4-state cost study (SUNY, Florida, Ohio, Illinois)

	% of all credits taken	% of total spending on instruction	Avg weighted cost/credit
Lower Division	36%	23%	1.00
Upper Division	48%	44%	1.42
Grad 1	12%	23%	2.88
Grad 2	4%	9%	4.00
	100%	100%	1.55

**SHEEO, 2010
Courtesy Jane Wellman**



Percentage of All Dropouts by Cumulative Months Enrolled, Beginning Postsecondary Students 2003-04



NCES, BPS, undergraduates only
Courtesy Jane Wellman



Moody's Investor Service Report January 23, 2012

“Tuition levels are at a tipping point”

Higher education must innovate to remain viable

- **Collaborations between colleges**
- **More centralized management**
- **More efficient use of facilities**
- **Reduction in number of tenured faculty**
- **Geographic and demographic expansion of course offerings**

<http://chronicle.com/article/article-content/130434/>



New Moody's Report, August 2013

In 2012:

- enrollment at public colleges was essentially flat**
- revenues grew less than 2 percent**
- expenses increased more than 3 percent**

“...political pressure to limit tuition increases and little expectation for big improvements in state spending mean that public colleges will have to continue to cut costs for the foreseeable future.”

<http://chronicle.com/blogs/bottomline/moodys-report-forecasts-a-gloomy-future-for-public-universities/>



6. Evidence of Success

2006 American Institutes of Research (AIR)

20% of U.S. college graduates only have basic quantitative literacy skills...

...unable to estimate if their car has enough gasoline to get to the next gas station.

More than 50% of students at 4-yr colleges lack the skills to perform complex literacy tasks, such as comparing credit card offers or summarizing the arguments of newspaper editorials.

http://www.air.org/news/index.cfm?fa=viewContent&content_id=445

Academically Adrift
R. Arum & J. Roksa



45% of students did not demonstrate any statistically significant improvement in Collegiate Learning Assessment (CLA) performance during the first two years of college.

A further study has indicated that 36% of students did not show any significant improvement in Collegiate Learning Assessment (CLA) performance over four years.



Graduation Rate, 2010 Study

63.2% of 2003 students who began at a 4 -year college earned bachelor' s degree by 2009.

Beginning Postsecondary Survey, National Center for Education Statistics, U.S. Department of Education.

<http://www.quickanded.com/2010/12/u-s-college-graduation-rate-stays-pretty-much-exactly-the-same.html>

New Study 2012

Full time students: 75% in 6 years

Part time students: 32% in 6 years

New National Tally of College Completion Tries to Count All Students.

<http://chronicle.com/article/New-National-Tally-of-College/135792/>



Student Debt

Student loan debt outpaced credit card debt for the first time last year.

\$ one trillion dollars this year

Average debt for those with loans is now \$ 24,000.

http://www.nytimes.com/2011/04/12/education/12college.html?_r=2

Americans aged 50 and older owe \$ 139 billion in student loans.

College (Unbound). Jeffrey J. Selingo. 2013



7. Public Opinion

***** 60% (six out of ten) of Americans in 2010 said that colleges today ... focused more on the bottom line than on the educational experience of students.**

http://www.highereducation.org/reports/squeeze_play_10/squeeze_play_10.pdf

***** In a recent survey, 80% said that at many colleges, education received is not worth the cost.**

Time Magazine, October 29, 2012, p. 37

***** Lumina survey in November/December 2012, three quarters (3/4) of respondents said that college is unaffordable.**

<http://chronicle.com/article/Americans-Value-Higher/137023/>

Is Disruption Coming?

Clayton Christensen

Disruption comes from cheaper and simpler technologies that are initially of lower quality. Over time, the simpler and cheaper technology improves to a point that it displaces the incumbent.

He argues that technology, and especially the on-line course, is the disruption enabler.

The Innovative University.
**Clayton Christensen and
Henry J. Eyring. 2011**





AASCU' s Red Balloon Project 2010

- **Declining Funding**
- **Increasing Expectations**
- **Technology Revolution**





**Defense
Advanced Research Projects
Agency**



RED BALLOON CONTEST

- ✱ **40th Anniversary of the Internet
1969 - 2009**
- ✱ **Contest: Find Ten (10) Bright Red
Helium-filled Balloons
Located Somewhere in
the United States**
- ✱ **Prize: \$ 40,000**



DARPA RED BALLOON CONTEST





How long did it take to find 10 randomly placed 8 foot high bright red weather balloons, suspended 30-50 feet above the ground, somewhere in the United States?

8 hours, 52 minutes




The Red Balloon Contest Is Both:

A Metaphor


And

An Analogy

The logo features a red balloon with the number '16' on it, tied to a small basket, set against a blue sky background.

**The Red Balloon Contest is a
Metaphor for the new ways that
knowledge is now being:**

- **Created**
- **Aggregated**
- **Disseminated**

The logo features a red balloon with a white number '16' on it, floating against a blue sky with a small white cloud.

**The Red Balloon Contest Is an
Analogy for the way that we might
work together collaboratively to re-
design undergraduate education**



Technology Changes Everything

- **Place**
- **Expertise**
- **Processes**
- **Scale**
- **Imagining what's possible**



The Concept of Expertise

Study in the journal *Nature*
comparing the accuracy of entries in two
well-known on-line references:

Encyclopedia Britannica

Wikipedia

*Found that error rates were about 3 per
entry for Encyclopedia, 4 per entry for
Wikipedia*

<http://www.nature.com/nature/journal/v438/n7070/full/438900a.html>



Encyclopedia Britannica

Founded in 1768, on-line version started in 1994, the first internet encyclopedia.

English print edition is (was) a 32 volume set, 64,000 articles, 4,300 contributors, latest print edition 2005.

Breaking News. 13 March 2012

After 244 years, Encyclopedia Britannica has decided to stop publishing its famous and weighty 32-volume print edition.

<http://www.bbc.co.uk/news/business-17362698>



Wikipedia

Edited by anyone, 7th most visited website in the world.

78 million readers in U.S., 365 million worldwide, each month.

250+ languages

4,286,362 articles in English, 14 million articles total. 22,711,389 pages

Staff of 30, started 2001, not-for-profit organization

Wikipedia's Evolving Impact. Stuart West. TED2010

We now live in a world where solitary expertise is still important, but increasingly we use networked knowledge and linked/shared information to advance knowledge and understanding.



Devin Bloom and a team of ichthyologists collected 5,000 fish specimens from Guyana's Cuyuni River system in South America.

They needed to identify them quickly.

**They loaded pictures of all 5,000 fish onto Facebook.
Within 24 hours, all 5,000 were identified.**

**[http://www.sciencedaily.com/releases/2011/05/110513204526.htm?
utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A
+sciencedaily+%28ScienceDaily%3A+Latest+Science+News
%29&utm_content=Google+Feedfetcher](http://www.sciencedaily.com/releases/2011/05/110513204526.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29&utm_content=Google+Feedfetcher)**

Networked knowledge...

The wisdom of crowds...

**And now, perhaps the most critical
component...**

Vast and rapid improvements in technology



“WISCONSIN appears to be in the driver’ s seat en route to a win, as it leads 51-10 after the third quarter. Wisconsin added to its lead when Russell Wilson found Jacob Pedersen for an eight-yard touchdown to make the score 44-3”

A typical sports article that might appear in a local newspaper?

Yes...but this one was written 60 seconds after the 3rd quarter by a computer...that charges less than \$10 for articles of less than 500 words.

In Case You Wondered, a Real Human Wrote This Story. Steve Lohr, *The New York Times*, September 10, 2011



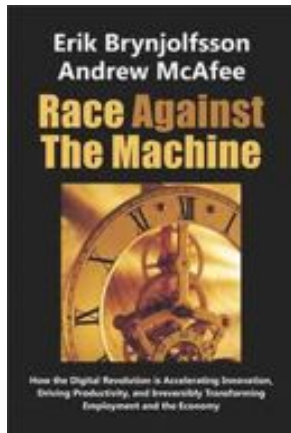
IBM' s Watson played Jeopardy

For each question, Watson evaluated information from about 200 million pages of content, or 1 million books, in 3 seconds.

Watson won the 3 rounds, with 3 times (\$ 77,147) as much as the next competitor, Ken Jennings (\$ 24,000).

“ Artificial intelligence machines are getting so good, so quickly, that they’ re poised to replace humans across a wide range of industries...

...diagnosing your diseases, dispensing your medicine, handling your lawsuits, making fundamental scientific discoveries and even writing stories just like this one.



**Farhad Manjoo. “Meet Mr. Bot. He’ s the competition.”
Washington Post. October 2, 2011. P. G5.**



Science Fiction?

Brave New World?

End of Civilization?

**Evolutionary changes take hundreds,
sometimes thousands of years.**

**Meanwhile, every 18 months, computing
power doubles while computing costs
drop by half (Moore's Law).**



Technology Changes Everything

Think about the impact of technology:

On journalism...

Rocky Mountain News

On the music business...



On the photography business...



On the book publishing/selling business...



The Long Tail.

Chris Anderson (Hyperion, 2006)



But do we realize the impact in time?

Once you see this pattern—a new story rearranging people's sense of the possible, with the incumbents the last to know—you see it everywhere. First, the people running the old system don't notice the change. When they do, they assume it's minor. Then that it's a niche. Then a fad. And by the time they understand that the world has actually changed, they've squandered most of the time they had to adapt

Napster, Udacity, and the Academy. Clay Shirkey (blog post)
November 12, 2012. <http://www.shirky.com/weblog/2012/11/>



Headline in the Washington Post, Spring 1900, just before its first auto show in December 10, 1900.

“Horse Market Active. Effect of Automobile is Not Feared by Dealers. It Is Looked Upon Only as a Fad”

Washington Post, Monday, February 4, 2013 John Kelly's Washington

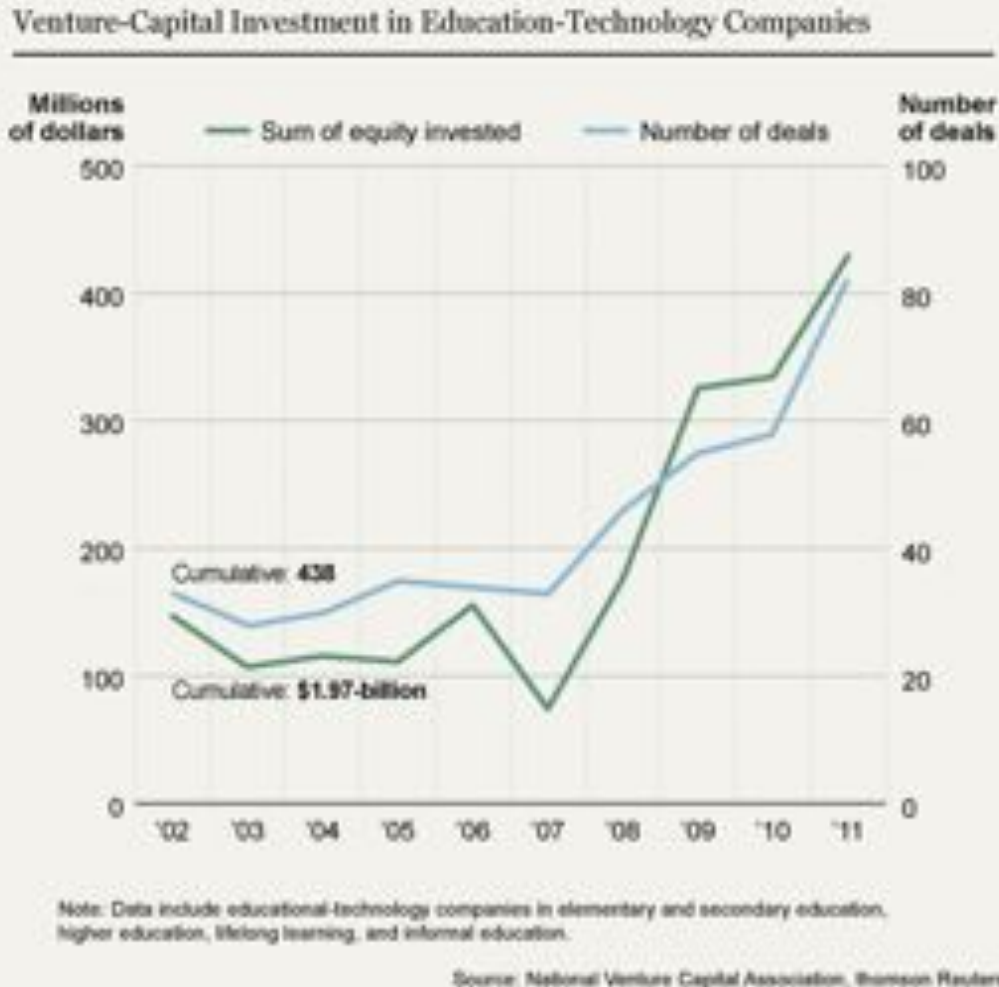
- **Overman Automobile Company**
- **Riker Motor Co. Knox Automobile Company**
- **Woods Motor Vehicle Company**
- **Pennsylvania Horseless Carriage Manufacturing Company**
- **Electric Vehicle Company**



What' s Changing?

- 1.The Role of Venture Capitalists**
- 2.The Models of College**
- 3.The Course Models**
- 4.Data Analytics**
- 5.Personalization**
- 6.Reducing Costs**
- 7.Measuring Success**
- 8.Threats to the Degree**

1. The Role of Venture Capitalists



New Start-Ups

Udacity
Udemy
University Now
Coursebook
Coursekit
Courseload
CourseRank

<http://chronicle.com/article/A-Boom-Time-for-Education/131229/>



2. The Models of College

- **University of the People (UoPeople):**
- **Western Governors University (WGU)**

now also WGU Indiana, WGU Washington (state), WGU Texas,
WGU Tennessee, and WGU Missouri
- **Peer to Peer University P2PU**
- **Udemy**

and new forms of collaboration and sharing...
- **The New Paradigm Initiative**



3. The Course Models

- **Cottage Industry Models**
- **Open University (UK) – University of Phoenix Models**
- **Partnership Models (USC)**
- **Individual Course Models**
- **Massive Open Online Courses**



Cottage Industry Model

Everyone designs his or her own course, from scratch, each semester.

And no one learns anything about the most effective course content or most effective teaching practices...

except that individual teacher, who learns only from his or her own experiences.



Open University of the UK - University of Phoenix Model

- **Huge resources (money and people) put into course design**
- **Taught by a large number of adjuncts in a fairly similar way**
- **Evaluation of learning outcomes conducted by another unit**
- **Huge scale involved (U of Phoenix 450,000 students)**



Partnership Model (USC)

Venture capitalist partners with a public or not-for-profit university

- **2tor USC and John Katzman. MAT**
- **Academic Partnerships. Example, Lamar University and Randy Best: MA in Education – reduced cost and time to completion.**
- **2U. Semester Online. 10 universities**

The last frontier, when outsourcing finally penetrates the academic center.



Individual Course Offerings

StraighterLine:

- **offers courses for \$ 99**
- **entire freshman year for \$ 999**

Blackboard and K-12, Inc

- **Selling online courses to community colleges**



Massive Open Online Courses (MOOCs)

**Stanford University. Computer Science (CS) 221
Offered Fall 2011 by S. Thrun and P. Norvig.
More than 160,000 students from 190 countries.
44 languages. 23,000 students completed. 200
Stanford students enrolled; by the end of the course,
only 30 Stanford students were still attending the
lecture.**

Great resource on MOOCs: <http://iberry.com/cms/mooc>

- EdX**
- Coursera**
- Udacity**
- Semester Online**



The State of the MOOCs

Mixed messages

Bad News

- 1. Hype cycle**
- 2. Lack of completion**
- 3. Credit for MOOCs**
- 4. No one wanted credit for MOOCs, Colorado State**
- 5. Udacity MOOC at San Jose State on hold**

Good News

- 1. Coursera got \$ 43 million in additional funding**
- 2. Institutions/systems, 9 states, signed with Coursera**
- 5. Many institutions experimenting with MOOCs**
- 6. 6 million students enrolled**
- 7. EdX MOOC at San Jose State succeeds**



“MOOCs are not the future of higher education-----

----- that future will be far more various and surprising than we can see now-----

but they do expand the horizon of the visible.

Clay Shirkey. MOOCs and Economic Reality. Chronicle of Higher Education. July 8, 2013



4. Analytics (Big Data)

A method of warehousing, organizing, and interpreting the massive amounts of data accrued by online learning platforms and student information systems ...

... in hopes of learning more about what makes students successful...

... and by giving instructors (and the platforms themselves) the chance to adjust to improve learning outcomes.

<http://www.insidehighered.com/news/2010/11/09/completion>



Analytics provides:

Information for the Institution

- **Predicting academic demand**
- **Tracking course success**
- **Dropout prevention, social integration**
- **Reporting information: state, federal, accreditors**

Information for Faculty Members

- **Student Progress and Success**
- **Areas of Confusion or Misunderstanding**

Information for the Student

- **Course selection and progress**
- **Major selection**
- **Program progress**



5. Personalization

The capacity of software and systems to tailor course materials, learning processes, and approaches to the unique circumstances of individual learners.

- **Individual characteristics**
 Learning style
 Memory decay
 Pacing
- **Obstacles or misunderstandings**



6. Reducing Costs

- **Free Textbooks**
- **Time to Completion**
- **120 hours for all majors**
- **Reducing bottlenecks in completion**
- **Charging out-of-state for 30+ credits
beyond graduation requirements**
- **Intrusive advising and early remediation**
- **Flat rate for summer courses**



7. Measuring Success

CAAP (ACT)

MAPP (ETS)

CLA (CAE)

**Lumina's Degree Qualifications Profile
(DQP)**

**National Institute of Learning Outcomes
Assessment (NILOA)**

**New Leadership Alliance for Student
Learning and Accountability**



8. Threats to the Degree

New Concepts of the Degree (competencies)

- **Southern New Hampshire University**
- **Northern Arizona University**


Prior Learning Assessments

Badges (Kahn Academy, etc.)

Certifications (CLA and Straighter Line)



So What Does Disruption Look Like?



Drivers of the New 21st Century University

Cost
Efficiency
Effectiveness

Strategies for Success

Scale
Experimentation
Differentiation
Partnerships
Challenging Old Models and Paradigms
Reliance on Evidence

Changes in Physical Space

- **Classrooms**
- **Library**
- **Bookstore**
- **Office Space**
- **Campus**



Flipped Courses

The “flipped” course. You do homework by watching lectures. You go to class to work on problems together.

Khan Academy: 2,400 videos covering everything from arithmetic to physics, finance, and history. Khan lessons viewed by more than 4,000,000 people a month.

<http://www.khanacademy.org/>



Open Learning Initiative (OLI)

Carnegie Mellon University

<http://oli.web.cmu.edu/openlearning/index.php>

**Team: learning scientists
faculty content specialists
human computer interaction experts
software engineers**

Results showed that OLI-Statistics students learned a full semester's worth of material in half as much time and performed as well or better than students learning from traditional instruction over a full semester.

<http://oli.web.cmu.edu/openlearning/publications/71-effectiveness-statistics0>



Science Classes

The Carl Wieman Science Education Initiative

Three strategies:

- 1. Reducing cognitive load**
- 2. Addressing beliefs**
- 3. Stimulating and guiding thinking**

<http://www.cwsei.ubc.ca/>

Experiment produced two times the learning outcomes

Deslauriers, Schelew, and Wieman. Science. 13 May 2011, pp. 862 – 864.



Math Emporiums

“Higher Education’s Silver Bullet” Carol Twigg <http://www.changemag.org/Archives/Back%20Issues/2011/May-June%202011/math-emporium-full.html>

3 Keys To Success:

- 1. Interactive computer software**
- 2. Personalized on-demand assistance**
- 3. Mandatory Student Participation**



Blended Courses

Blended (hybrid) courses combine fact-to-face classroom instruction with online learning and reduced classroom contact hours (reduced seat time)

Charles Dziuban, Joel Hartman, Patsy Moskal. Blended Learning. EDUCAUSE. 2004 <http://net.educause.edu/ir/library/pdf/ERB0407.pdf>

SRI Study

<http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>

Ithaka Study

<http://www.sr.ithaka.org/research-publications/interactive-learning-online-public-universities-evidence-randomized-trials>

A small logo in the top left corner featuring a red balloon with the number '16' on it, tied to a blue object.

Online Classes

Potentially the greatest disrupter of all

- **Scale**
- **Cost**
- **Features and Tools**
- **Competitiveness**



Broad Course Re-Design

George Kuh *High Impact Practices*

- First-year seminars and experiences
- Common intellectual experiences
- Learning communities
- Writing-intensive courses
- Collaborative assignments and projects
- Undergraduate research
- Diversity/global learning
- Service learning, community-based learning
- Internships
- Capstone courses and projects

George Kuh. High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter. AAC&U, 2008.

Ensuring Quality & Taking High Impact Practices to Scale. AAC&U, 2013.





Free and Inexpensive Materials

Free courses: 15,000+ free courses

Free textbooks: Temple, Rice, Flatworld

Free materials: Open Educational Resources (OER) initiative, \$110 million, Hewlett

“One potential ... introductory courses are commodities offered free or close to free.

Jeff Selingo. A Disrupted Higher-Ed System <http://chronicle.com/blogs/next/2012/01/26/a-disrupted-higher-ed-system/>



Library: Repository and source of information, but also gathering and learning space.

Bookstore: Books: From linear to hyper.

Offices: From cloistered to open, from individual to collaborative.

Campus: From physical space to physical and virtual space. From rigid boundaries to permeable membrane. Partnerships, community engagement, sharing of resources.



Changes in Academic Structures

- **Course (set of competencies)**
- **Credit Hour (based on seat time)**
- **Semester (unlike Facebook)**
- **Curriculum (interdisciplinary, community-linked)**
- **Degree (competency, certificates, etc.)**



Changes in Administrative Practices

- **Outsourcing**
- **Campus Consolidation**
- **Multiple-institutional Courses**
- **Strategic and Corporate Partnerships**
- **Contingent and Flexible Workforce**
- **Alterations in Benefits**



Categories Will Become Blurred

- **High school / college**
- **Two year / four year**
- **Transfer**
- **Academic Affairs / Student Affairs**
- **Interdisciplinary**
- **Academic Units Based on Topics/Problems**



Changes in Faculty Work

- **Faculty will work in a networked world --- collaboration of faculty, other experts, and students across time and space.**
- **Faculty will become more interdisciplinary as they also become more specialized.**
- **Many other specialists will be involved in teaching and learning.**



So here's the question for you:

**As individuals involved in
sponsored programs and
research, how does all of this
disruption affect you?**



As students pay more and more of the costs of higher education, there will be greater pressure on the issue of research. Will we conduct the research enterprise on the backs of students?

What is the appropriate role of research, particularly in regional comprehensive universities?



How do institutions compete for external funding in an increasingly resource-strained environment?

How do we frame or conceptualize the research enterprise, and its relationship to the rest of the university?



One critical institutional question:

**What is the unique value
that your institution adds?**

**What does your institution do that
cannot be done as well or better by
others?**



The Key Institutional Question:

What Are We?

- **Deliverer of Instruction?**
- **Workforce Preparer?**
- **Assessment Center?**
- **Bundler of Credits?**
- **Certifier of Competency?**
 - **Degree Provider?**
- **Research Organization?**



The Key Challenge

How do we educate more
students, with greater
learning outcomes, at lower
costs?



**Our system of higher education
was originally built on scarcity;**

**Now it has to be re-built on
abundance.**

**Our system was originally built
on faith; now it will have to be
built on evidence.**



America's economy is caught up in a "race between innovation and calcification--between the power of new ideas to lower costs and boost quality, and the power of entrenched interests to protect their habits and incomes."

Matt Miller, Washington Post, September 22, 2010

The Ultimate Question For Our Institutions


**Can we transform ourselves
before we are disrupted?**

The challenge is enormous. We have a confusion of purposes, distorted reward structures, limited success, high costs, massive inefficiencies, and profound resistance to change.



The Pony Express

A Cautionary Tale About Disruption



PONY EXPRESS
St. JOSEPH, MISSOURI to CALIFORNIA
in 10 days or less.

WANTED

YOUNG, SKINNY, WIRY FELLOWS
not over eighteen. Must be expert
riders, willing to risk death daily.
Orphans preferred.
Wages \$25 per week.

APPLY, **PONY EXPRESS STABLES**
St. JOSEPH, MISSOURI



The Pony Express

St. Joseph, MO to Sacramento, CA 1,900 miles

Stations set up every 10 miles (as far as a horse can gallop); Riders changed every 60 to 100 miles.

**Reduced letter delivery
from 24 to 10 days**



Started: April 3, 1860

Ended: October 26, 1861

19 months later

Why?

**The completion of the
transcontinental telegraph**



**“It is not the strongest of the
species that survives, nor the
most intelligent.**

**It is the one that is the most
adaptable to change.”**

Attributed (apparently incorrectly) to Charles Darwin



For a detailed discussion of many of the issues
in this presentation, see:

“Challenge and Change.” *EDUCAUSE Review*.

George L. Mehaffy. (vol. 47, no. 5. September/ October 2012).

<http://www.educause.edu/ero/article/challenge-and-change>